



江苏长晶科技股份有限公司
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

产 品 规 格 书

SPECIFICATIONS FOR PRODUCT

产品类型 TYPE : Quartz Crystal

产品规格 SPEC : 32.768KHz/2012/12.5PF/20PPM

产品型号 P/N : CJK08-327681220B20

日期 DATE : 2022/08/12

| | | | |
|----------------------|---------------------|-------------------|--------------------|
| 核准及签名 | | | 部门 DEPT. |
| R&D APPR. SIGNATURED | | | |
| 拟制 | 审核 | 批准 | 频率器件事业部 |
| ISSUE | CHECK | APPROVAL | |
| Ivan 2022/08/12 | Abbey 2022/08/12 | Ken 2022/08/12 | |

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CJK08 Quartz Crystal

CJK08-327681220B20

1. Scope:

This specification applies to the RoHS/SONY compliance quartz crystal unit with a frequency of 32.768KHz which will be used in crystal oscillator applications.

Construction:

2.1 Type of Quartz Resonator: CJK08

3. Electrical Characteristics

| | |
|---|---------------------------------|
| 3.1 Mode of Vibration : | +2°X-cut , Fundamental |
| 3.2 Nominal frequency(F): | 32.768KHz |
| 3.3 Load Capacitance(C _L): | 12.5PF |
| 3.4 Frequency Tolerance at 25℃ | ±20ppm |
| 3.5 Series Resistance(R _r): | 80 KΩ Max |
| 3.6 Quality Factor(Q): | 13 KΩ Min |
| 3.7 Turnover Temperature(T _o): | 25 ℃ ± 5℃ |
| 3.8 Temperature Coefficient(K): | -0.035±0.005 ppm/℃ ² |
| 3.9 Operation Temperature: | -40 ℃ ~ +85℃ |
| 3.10 Preservation Temperature: | -55 ℃ ~ +125℃ |
| 3.11 Shunt Capacitance(C _o): | 1.15PF Typical |
| 3.12 Aging 1st Year(Δf/f): | ±3 ppm Max. |
| 3.13 Shock Resistance: | ±5 ppm Max. |
| 3.14 Motional Capacitance(C ₁): | 4.6fF Typical |
| 3.15 Insulation Resistance: | 500MΩ at DC 100V±15V |
| 3.16 Drive Level: | 0.5μW Max |

Reliability Specifications

4. Reliability Specifications

This is the quality control and quality assurance and reliability tests performance data for the RoHS/SONY compliance 32.768KHz SMD2012 Quartz Crystal.

related to the specification and approval sheet provided by JSCJ .

Standard test condition (TEMP.: 20±5°C. Relative humidity: 65±20%)

For any discrepancy in GO/NG, test will be done at TEMP.25±2°C, R.H. 65±5%.

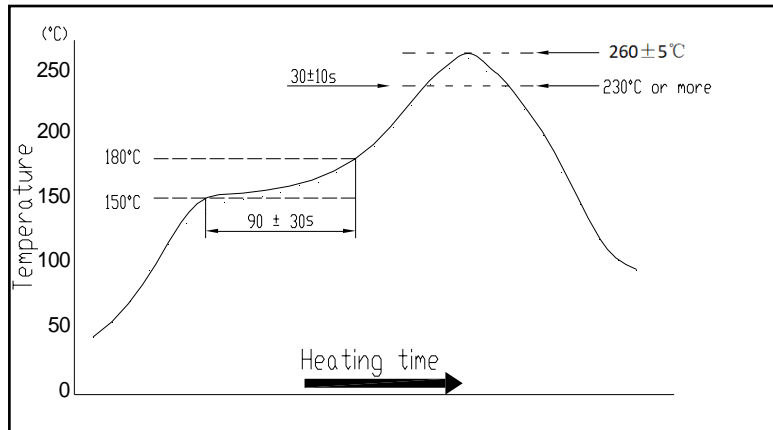
| NO. | PROCESS | SPECIFICATION | TEST METHOD |
|------|--|--|---|
| 4.1 | Temperature Cycle (GB/T 2423.22-2002, Method Nb) | Frequency change after test ± 5 ppm. Resonance resistance change after test ≤ 10 ohms. | 10 cycles from -55°C to 125°C. Measurement taken after DUT being left at room temperature for 24±2 hours. |
| 4.2 | Low Temperature Storage (GB/T 2423.1-2001, Method Aa) | Frequency change after test ± 5 ppm. Resonance resistance change after test ≤ 10 ohms. | Spending 72 hrs at -55°C±3°C constant temperature. Measurement taken after DUT being left at room temperature for 24±2 hours. |
| 4.3 | High Temperature Storage (GB/T 2423.2-2001, Method Ba) | Frequency change after test ± 5 ppm. Resonance resistance change after test ≤ 10 ohms. | Spending 72 hrs at 125°C±3°C constant temperature. Measurement taken after DUT being left at room temperature for 24±2 hours. |
| 4.4 | Humidity (GB/T 2423.3-2006, Method Cab) | Frequency change after test ± 5 ppm. Resonance resistance change after test ≤ 10 ohms. | Spending 96 hrs at 40 °C ± 3 °C, with 93 %R.H, Then keep the DUT in dry oven at 40 ± 5 °C for 24 hour. Measurement taken after DUT being left at room temperature for 1 to 2 hours. |
| 4.5 | Vibration (GB/T 2423.10-1995, Method Fc) | Frequency change after test ± 5 ppm. Resonance resistance change after test ≤ 10 ohms. | Apply 0.75mm vibration at sweep frequency 10~500 Hz, 10 cycles in each direction of 3 axis. Measurement taken after 1 hour. |
| 4.6 | Shock (GB/T 2423.5-1995, Method Ea) | Frequency change after test ± 5 ppm. Resonance resistance change after test ≤ 10 ohms. and exhibit no visible damage. | Peak 1000m/s ² , normal width 6ms half sine wave form, 3.7m/s, 3 perpendicular axis of samples, 3 cycles / direction, total 18 cycles. Measurement taken after 1 hour. |
| 4.7 | Drop (GB/T 2423.8-1995, Method Ed) | Frequency change after test ± 5 ppm. Resonance resistance change after test ≤ 10 ohms. and exhibit no visible damage. | Free drop to the steel plate with thickness of 3 mm from 0.75 m heights for 3 times. |
| 4.8 | Solderability (IEC60068-2-58, Test Td:) | Terminals shall be covered more than 95% with solder. | Passed through the re-flow oven under the following condition. Preheat 150 to 180°C for 60 to 120sec, and soldering time for 20s ± 5s at 235°C, peak soldering time for 10s ± 1s between 240 and 250°C. There is no need to do functional test. 8-12X magnifier. |
| 4.9 | Terminal Strength (JIS-C-6429 Method 1 & 2) | No visible damage | Mount on a glass-epoxy board (100x50x1.6mm), then bend to 2mm displacement (velocity 1mm/sec) and keep for 5 seconds. or pulling force 0.5kg for at least 60 seconds. |
| 4.10 | Resistance to Soldering Heat (IEC60068-2-58, Test Td: Table 4) | Frequency change after test ± 5 ppm. Resonance resistance change after test ≤ 10 ohms. | Passed through the re-flow oven under the following condition. Preheat 150 to 180°C for 60 to 120sec, and soldering time for 60s max at 235°C, peak soldering time for 20s max at 265°C max. Measurement taken after DUT being left at room temperature for at least 2 hours. |
| 4.11 | OTHERS | | |

Recommended Reflow soldering conditon

5. Recommended Reflow soldering condition (SMD)

Solder profile

Peak: $260 \pm 5^\circ\text{C}$ Soldering zone: 230°C or more, $30 \pm 10\text{s}$. Pre-heating zone 1: $150 \sim 180^\circ\text{C}$, $90 \pm 30\text{s}$



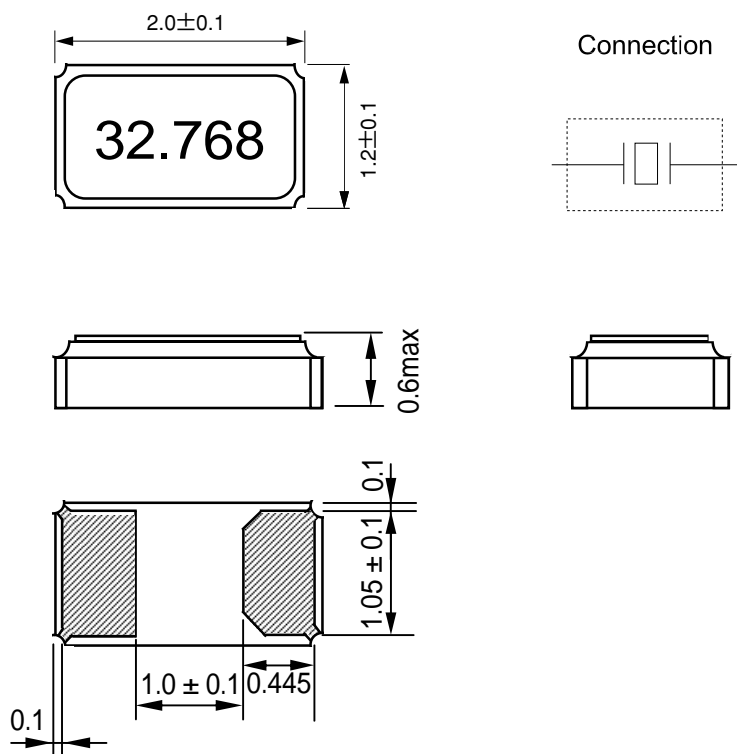
Temperature profile for reflow soldering

6. Soldering iron method

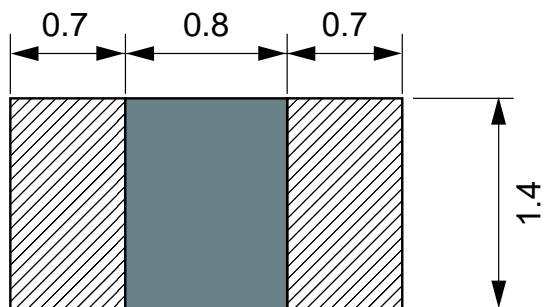
Bit temperature: $350 \pm 10^\circ\text{C}$ Application time of soldering iron: $3+1\text{ s}$. For other procedures, refer to IEC 60068-2-20.

Package Outline Dimensions

Units:mm

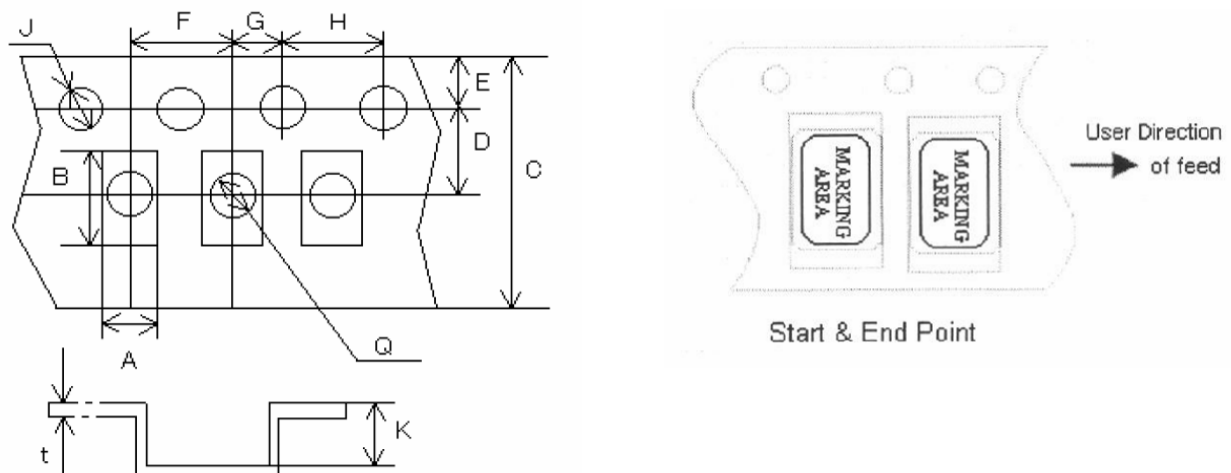


Suggested Pad Layout



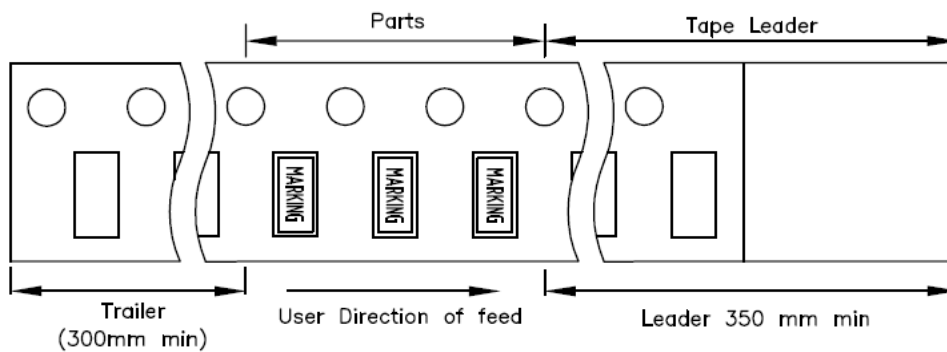
Tape and Reel

CARRIER TYPE

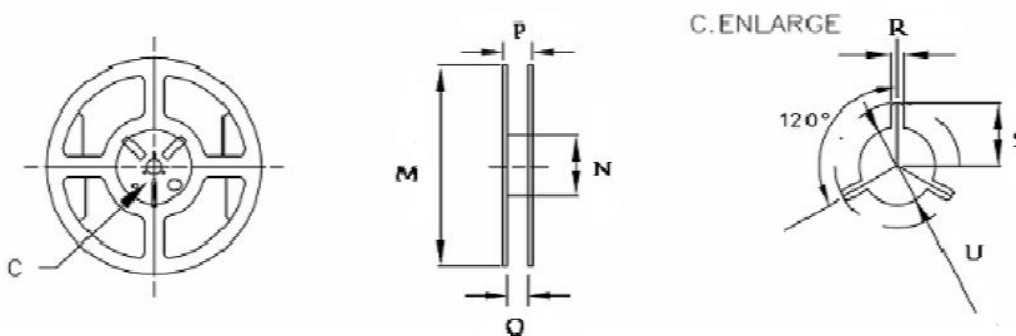


| A | B | C | D | E | F | G | H | J | K | t |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|------|
| 1.4 | 2.3 | 8.0 | 3.5 | 1.75 | 4.0 | 2.0 | 4.0 | 1.5 | 0.75 | 0.25 |

REMARK



REEL : 3000 PCS/Reel



| M | N | P | Q | R | S | U |
|-----|------|------|-----|-----|------|------|
| 178 | 60.2 | 11.5 | 8.0 | 2.5 | 11.0 | 13.0 |

NOTICE

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